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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WRIGHT, ANDREW D

ART UNIT PAPER NUMBER

3617

DATE MAILED: 08/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/936,089

Applicant(s)

DUNCAN, IAN JAMES

Examiner

Andrew Wright

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13, 14 and 18-26 is/are rejected.
- 7) ☒ Claim(s) 12 and 15-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 5/16/03 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander, Jr. (US 5,685,253) in view of Sinclair, Jr. (US 4,774,902). Alexander teaches that the centers of gravity and lift should be close for balance. Alexander discloses a hull shape that has a wetted surface similar to that claimed (see figures 14-17 of Alexander). Visual examination of the figures reveals that the design speed aspect ratio is roughly 2.5, which is the lower end of the recited range of claim 1. Furthermore, the skilled artisan will recognize that the design speed aspect ratio of Alexander will be greater than the lift off speed aspect ratio because the wetted span is almost at its maximum during design speed so it will only increase slightly from design speed to lift off speed, while the wetted area will greatly increase between design speed and lift-off speed. Alexander further teaches that the amount of wetted planning surface and the location thereof are best determined empirically on a case-by-case basis. Therefore, using the disclosure of Alexander as a starting point, and recognizing that the lift off speed aspect ratio will necessarily be less than the design speed aspect ratio, a design speed aspect ratio of 2.5 to 5.0 and a lift off speed aspect ratio of 1.5 to 2.5 would be within the range of experimentation of one skilled in the art. It would have

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been obvious to one having ordinary skill in the art at the time the invention was made to modify the hull of Alexander through experimentation to achieve such an aspect ratio to optimize the hydrodynamic performance of the hull for the particular design objective of the hull, as taught by Alexander. As stated, Alexander teaches that the centers of gravity and lift should be close for balance. Sinclair teaches that the centers of gravity and lift should "practically coincide ... to provide an exceptional balance" and eliminate pitching and pounding of the hull. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the hull of Alexander by locating the centers of gravity and lift coincident with each other. It would be obvious to do this at all operating speeds to provide the exceptional balance at all times of operation. The modified invention of Alexander is a watercraft. The center of lift will necessarily move forward to create a restoring force when the bow abruptly pitches down, and will necessarily move rearward to create a restoring force when the bow abruptly pitches up.

3. Claims 5-11, 13, 14, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified invention of Alexander as applied to claim 1 above, and further in view of Fisher (US 3,745,963). Alexander does not disclose a generally transverse leading edge of the wetted area of the hull. Fisher discloses a substantially flat bottom planning boat with a cut out at the stern similar to that of Alexander. The flat bottom of Fischer will have a transverse leading edge of the wetted hull portion. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the hull of Alexander by employing a flat bottom. The

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motivation would be to further experiment with and optimize the hydrodynamic characteristics of the hull. The hull of Alexander has a central portion and side wing portions that extend rearward and laterally of the central portion (figs 17-20). The opening behind the central portion and between the side portions is covered by another section of hull. Alexander does not disclose propellers, but it is well known in the art to locate propellers in this cutout section. Fisher discloses this practice in figure 3. Therefore it would have been obvious to further modify the hull of Alexander by adding two propellers in the cutout, the motivation being to provide propulsion for the watercraft. Alexander also discloses trim tabs that constitute a trailing edge portion that can be abruptly downswept at variable angles including 45° and 90°. Alexander does not disclose a keel portion. Fisher discloses a keel on the underside of the hull. It would have been obvious to add such a keel and to locate it substantially vertically aligned with the centers to optimize the hydrodynamic performance of the hull. Retractable keels are well known in the art to provide stability when deployed and reduce drag when retracted. It would have been obvious to make the keel retractable for obtaining lateral stability in some deployed situations and reduced drag in retracted situations. Regarding claims 18-21, Fisher discloses a hull shape with lightly cambered surfaces on both the side wing portions and central portion. It would have been obvious to employ such shaping to optimize the hydrodynamic performance of the hull.

Allowable Subject Matter

4. Claims 12 and 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection. The arguments regarding the base combination will be addressed, however, in the interest of furthering prosecution. Applicant first argues that Alexander ('253) does not provide proper basis for determining dimensions. Whether intentional or accidental, the figures of Alexander plainly show a design speed aspect ratio of roughly 2.5. This provides proper basis for the *prima facie* case of obviousness presented in the rejection.

6. Applicant next argues that using Alexander as a starting point, "it would not necessarily follow that routine experimentation would result in the achievements of the invention." It is not clear what is meant by "achievements" in this context. If "achievements" refers to recited structure, then the argument amounts to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. And if "achievements" refers to other than that which is recited, then the argument is moot because, although the claims are interpreted in light of the specification, limitations from

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the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

7. Applicant states that fig. 16 of Alexander shows a design speed aspect ratio similar to the present invention lift-off speed aspect ratio. Alexander shows a design speed aspect ratio of roughly 2.5, which is included in the both the recited ranges of the design speed aspect ratio and the lift off speed aspect ratio. Applicant then states that the invention design speed aspect ratio is at least double the Alexander design speed aspect ratio. This does not change what Alexander shows: a design speed aspect ratio within or very near to the recited range. Applicant then states that the aspect ratio of the new hull is at least double that of the prior hull at lift off speed. This is merely an assertion that is not supported by any examination of Alexander ('253). Taken individually or together, these three statements do nothing to overcome the *prima facie* case of obviousness presented in the rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


9. Any inquiry concerning this communication should be directed to examiner Andrew D. Wright at telephone number (703) 308-6841. The examiner can normally be reached Monday-Friday from 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, S. Joe Morano, can be reached at (703) 308-0230. The fax number for official communications is 703-872-9326 for before final proceedings and 703-872-9327 for after final proceedings. The fax number for the examiner for unofficial communications is 703-746-3548.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist at (703) 308-1113.

Andrew D. Wright
Patent Examiner
Art Unit 3617

 7/30/03


S. JOSEPH MORANO
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